

## CHAPTER 12 EARTH RETENTION SYSTEMS

### SIFC-1201.0 GENERAL

The requirements of this chapter shall apply when construction includes earth retention systems elements as listed in Section SIFC-302.7 of this Special Inspections Document.

### SIFC-1202.0 CONSTRUCTION DOCUMENTS

**1202.1 Review and Approval:** The earth retention system *construction documents* shall be submitted for review and approval to the Building Plan Review Branch, DEM prior to permit issuance.

- **SER Review and Approval:** *Construction documents* for earth retention systems which are to become a permanent part of the final structure, including field inspection requirements, shall be reviewed and approved by the **Structural Engineer of Record (SER)** prior to submission to the Building Plan Review Branch.

**1202.2 Preparation of Construction Documents:** Earth retention system *construction documents*, including the related design calculations, shall be prepared, signed and sealed by a **Registered Design Professional** experienced in the design of earth retention systems. In addition to structural design, the *construction documents* shall include the following:

- **Adjoining Properties:** Recommendations for protecting adjoining properties, including existing public and private streets.
- **Slope Protection:** Specification of responsibility for protecting all slopes in accordance with general practice, throughout the course of the project.
- **Dewatering:** Any requirements for dewatering of the excavation that are specified or assumed in the earth retention system design.
- **Installation:** System installation criteria, including allowable inward movement, pile installation and tie-back criteria, and requirements for inspection and monitoring of the earth retention system construction and adjacent properties.

### SIFC-1203.0 FABRICATION AND ERECTION DOCUMENTS

**1203.1 Review and Approval:** The earth retention system *fabrication and erection documents* shall be submitted to the **SER** and **FCCSS** for review and approval prior to construction. The **General Contractor (GC)** shall submit two sets of **SER**-approved *fabrication and erection documents* to **FCCSS** for approval. After County

review and approval, **FCCSS** will return one set of *County-approved fabrication and erection documents* for use on the job site. *County-approved documents* shall be used by the **Special Inspections Engineer of Record (SIER)** to conduct special inspections during construction.

- 1203.2 Preparation of Fabrication and Erection Documents:** The **Registered Design Professional** responsible for the *construction documents* shall also prepare, sign and seal the *fabrication and erection documents*.

#### **SIFC-1204.0 INSPECTIONS**

- 1204.1 Special Inspections Required:** In problem soils areas, as defined by the Fairfax County Public Facilities Manual, the **Geotechnical Engineer of Record (GER)** shall perform the special inspections of the earth retention system. In non-problem soils areas, the **GER** or the **SIER** shall perform the special inspections. Earth retention systems shall have special inspections performed to determine compliance with *County-approved construction documents* and this Special Inspections Document, including the following:

- **Compaction:** Compaction process to determine that materials' quality and in-place density tests comply with the County-approved specifications and geotechnical notes and the requirements of BNBC Section 1705.7.
- **Backfill, Drainage and Waterproofing:** Backfill, foundation drainage systems and waterproofing during and following their placement for compliance with County-approved backfill, foundation drainage systems and waterproofing specifications.

- 1204.2 Inspection Reports:** Inspection reports shall be submitted to the appropriate **Registered Design Professionals** of record and **FCCSS**.

- 1204.3 Deviations:** Deviations from the *County-approved earth retention system construction documents* shall be subject to approval by the appropriate **Registered Design Professional** of record and the Building Plan Review Branch, DEM and **FCCSS** prior to work continuing in the affected area. When the earth retention system is to become a permanent part of the final structure, deviations shall also be subject to approval by the **SER**.

#### **SIFC-1205.0 COMPLETION OF EARTH RETENTION SYSTEM CONSTRUCTION**

At the completion of the earth retention system construction, the **SIER** shall, after review and approval by the appropriate **Registered Design Professionals**, submit a *Completion Letter* to **FCCSS**, and shall indicate the date of completion on the *Final Report of Special Inspections*.

- **SER Review and Approval:** When the earth retention system is to become

a permanent part of the final structure, the **SER** shall review and approve the *Completion Letter* prior to submission to **FCCSS**, with approval indicating that the system is acceptable as a structural element of the final structure.

